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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PAK, JOHN D

ART UNIT PAPER NUMBER

1616

DATE MAILED: 01/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/830,358

Applicant(s)

DUFAU ET AL.

Examiner

JOHN D PAK

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 20-38 is/are pending in the application.
- 4a) Of the above claim(s) 35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20-23,26,30-34 and 36-38 is/are rejected.
- 7) ☒ Claim(s) 24,25 and 27-29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

Claims 20-38 are pending in this application.

Claim 35 stands withdrawn as being directed to non-elected subject matter.

Claims 20-34 and 36-38 will presently be examined.

Applicant is advised that the following amendments would improve the form and clarity --

(1) Claims 21, 26, 34, after "selected from" insert --- the group consisting of ---.

This is the accepted language for listing alternatives in a Markush group.

(2) It is noted that claim 37 does not require a "suspension" of the copper ingredient "in an aqueous emulsion" of the terpenic derivative. If this were applicant's intent, so be it; but if not, amending to correspond to all the other claims would expedite prosecution.

Claim 30 and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 30, the percentage is not clear. Is it percentage by weight, volume, molar, or some other basis for the percentage?

Claim 36 does not clearly recite the "other ingredients of the composition." Although the claim preamble states a method of preparing a copper inorganic salt, oxide or hydroxide in suspension in an aqueous emulsion of at least one terpenic derivative, no other composition ingredient except the copper ingredient is specified in the actual process recitation. The terpenic derivative should be recited, as well as the

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“suspension in an aqueous emulsion” language, with appropriately specified ingredients to permit such a suspension in aqueous emulsion. The preamble must correspond to the process steps.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 20, 26, 31, 32, 33, 34, 37 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Clark et al. (US 3,592,910).

Clark et al. explicitly disclose a liquid polyterpene, MW = 272-544 (see from column 3, line 52 to column 4, line 68). The polyterpene is a short chain ( $n = 2$  to 4) of terpenes such as alpha-pinene, dipentene, terpinene, terpinolene (column 3, lines 71-74 & column 4, formula (I)). The polyterpenes are applied to plants in the form of aqueous emulsions (column 5, lines 24-28) from 1-50% or more, by volume (column 5, lines 39-61). Suitable emulsifiers include triethanoamine stearate, sodium lauryl sulfonate, sodium alkyl naphthalene sulfonate, sodium oleate, octylphenoxypolyethoxyethanol (column 5, lines 29-34; compare with applicant's claim 34). Emulsifiers comprise about 0.01 to 1 percent by weight of the total composition (column 5, lines 61-63). Combined use with pesticides for control of fungi, insects, rodents, and weed is disclosed (column 11, lines 14-27). In Example IX, Clark et al. explicitly disclose a composition of liquid polyterpene in combination with  $15\text{CuO} \cdot 10\text{ZnO} \cdot 6\text{Cr}_2\text{O}_3$  in equal

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amounts (column 11, lines 38-65). It is the Examiner's position that this substance meets the "oxide of copper" requirement. Clark et al. specifically disclose that, "In the pesticide compositions of this invention, the pesticide preferably is relatively insoluble in water ..." (column 11, lines 67-70). The process of making the pesticide composition by adding the pesticide to the aqueous emulsion is disclosed (column 11, lines 71-72).

The claims are thereby anticipated. For clarification, certain of applicant's claimed features will be further discussed hereinbelow.

Copper in suspension in an aqueous emulsion of at least one terpenic derivative

First, the polyterpenes disclosed by Clark et al. meet every reasonable definition of what "terpenic derivative" encompasses. The polyterpenes are made up of monomer terpenes, and the polymers are short, with only 2 to 4 monomer units. Second, the aqueous emulsion of the terpenic derivative is expressly disclosed. Third, the oxide of copper in Clark et al. is insoluble, so it must necessarily be suspended in an aqueous environment. If not dissolved, it must be suspended. The claim feature is thereby met.

Terpenic derivative present from 50-400 g/l

The polyterpenes disclosed by Clark et al. are present from 1-50%, by volume, or more. Applicant's range of 50-400 g/l is 0.5-40 wt/v%. Even though the Patent Office does not have specific gravity or density data for the short chain polyterpenes, such a broadly disclosed range would have readily encompassed a similarly broad range claimed by applicant, in view of the fact that monoterpenes are known to typically have densities around 1. As the Patent Office is not equipped with a laboratory to test and

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measure parameters that the prior art did not specifically disclose, applicant is in the better position to provide the density data if applicant should wish to challenge this feature vis-à-vis this ground of rejection. In the absence of such contrary evidence, the Examiner may properly rely on the fact that the same exact "terpenic derivative" is shown by the prior art at amounts that would necessarily encompass the claimed range. The claim feature is thereby met.

20-100 g/l of surfactant

Clark et al. explicitly disclose 0.01-1 wt% emulsifier. This is equivalent to 0.1-10 g/l of the emulsifier. All emulsifiers can be considered to have surface active properties, which make them "surfactants." The claim feature is thereby met.

Method of enhancing the efficacy of copper in a plant-protection composition

Clark et al. explicitly disclose extending the life of pesticides by adding the terpenic derivatives. Fungi control, as well as other plant protective uses are disclosed (column 11, lines 14-24). The claim feature is thereby met.

For these reasons, the claims are anticipated.

Claim 37 is rejected under 35 U.S.C. 102(e) as being anticipated by Kierzkowski et al. (US 6,069,113).

Upon further review of claim 37, it is noted that claim 37 does not actually recite that the copper must be suspended and does not actually recite steps of applying the

composition to plants. The only recited step is "combining inorganic salt, oxide or hydroxide of copper with a terpenic derivative."

Kierzkowski et al. explicitly disclose combining copper carbonate with d-limonene (Example 1, column 7). The claim is anticipated.

Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark et al. in view of Farm Chemicals Handbook '98.

Teachings of Clark et al. have been discussed above. The discussion there is incorporated herein by reference.

Farm Chemicals Handbook '98 discloses the well known fact that many inorganic salts, oxides and hydroxide of copper are agricultural fungicides. For example, see entries for copper (p. C100), copper ammonium carbonate, copper carbonate, basic, copper hydroxide, copper lime dust (p. C101), copper oxide, copper oxychloride (pp. C102-C103).

While Clark et al. do not specifically and explicitly disclose use of copper hydroxide, copper oxychloride, copper carbonate and copper (I) oxide at 200-600 g/l, such features would have been obvious to the ordinary skilled artisan in this field.

Clark et al. clearly teach using their terpenic derivatives with agricultural fungicides (see e.g., column 11, lines 14-20). Insoluble pesticides are preferred (column 11, lines 67-70). The ordinary skilled artisan would have been motivated from such teachings, particularly in view of other copper pesticide disclosures by Clark et al.

(column 2, line 60; column 11, Example IX, Table VII, first composition), to incorporate other well known agricultural fungicides such as the copper fungicides disclosed in the standard handbook, Farm Chemicals Handbook '98. Suspension would result from adding such insoluble copper fungicides to the aqueous emulsion of Clark's terpenic derivatives. Note again, Clark et al. prefer insoluble pesticides, so suspensions of insoluble copper fungicides are necessarily disclosed. As for the amount range of 200-600 g/l, first, the ordinary skilled artisan would have been quite knowledgeable of copper fungicide dosing amounts given their status as agricultural fungicides well known enough to appear in industry handbooks. Second, Clark et al. exemplify equal proportions of their terpenic derivatives and pesticides. Taken with Clark's 1-50% or more, by volume, of the terpenic derivatives and equal proportion of the pesticide, in view of ordinary skilled artisan's ability to concentrate or dilute copper amounts according to the particular conditions and needs of a target plant or field, the claimed 200-600 g/l of copper would have been within amounts that one having ordinary skill in the art would have been motivated to use to formulate the composition (in this light, see again the density discussion, pp. 3-4).

Therefore, the claimed invention, as a whole, would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, because every element of the invention and the claimed invention as a whole have been fairly suggested by the combined teachings of the references.

Claims 24-25 and 27-29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant is invited to contact the Examiner to expedite the further handling of this application, in view of its pendency. The Examiner will make himself available to attempt to work out an acceptable amendment.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to JOHN PAK whose telephone number is (703)308-4538. **Examiner Pak's telephone number will change on February 3, 2004. Examiner Pak's new number will be (571)272-0620, effective February 3, 2004.** The Examiner can normally be reached on Monday to Friday from 8 AM to 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's SPE, Thurman Page, can be reached on (703) 308-2927. Mr. Page's telephone number will change on February 3, 2004. Mr. Page's new number will be (571)272-0602, effective February 3, 2004.

The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-1235.

A handwritten signature in black ink, appearing to be 'JPak', written in a cursive style.

JOHN PAK  
PRIMARY EXAMINER  
GROUP 1000